Claims

1. A piezoelectric actuator, having

- a multilayer construction of piezoelectric layers (2) and inner electrodes (3, 4), which are located in a piezoelectrically active region (A) between the layers and can be acted upon by an electrical voltage, and having
- at least one inactive region (B, C) without inner electrodes in the layer construction of the piezoelectric actuator (1), characterized in that
- the at least one inactive region (B, C) without inner electrodes is formed of a material whose mechanical and thermal properties match the properties of the active region (A), including the combination and interaction of the material comprising the piezoelectric layers (2) and the inner electrodes (3, 4).

2. The piezoelectric actuator according to claim 1, characterized in that

- the inactive regions (B, C) and the active region (A) are made from an identical ceramic basic substance, with additional dopants inserted into the active regions (B, C).

3. The piezoelectric actuator according to claim 2, characterized in that

- the basic substance is lead zirconate titanate (PZT), and
the dopant is silver.

4. The piezoelectric actuator according to one of the foregoing claims, characterized in that

- as the matching mechanical and thermal properties of the piezoelectric layers (2) of the inactive region (B, C) and of the active region (A), the thermal expansion, the elasticity, and the shrinkage upon sintering of the multilayer construction of the piezoelectric actuator (1) may be employed.